

CLAIMS

1. A drainage device for a filter unit for microbiological testing of liquids, said drainage device including a mechanical support (10), which is adapted to receive a filter unit (16) including a membrane, and an suction pump (22) connected to said mechanical support to aspirate a liquid substance contained in said filter unit,

which drainage device is characterized in that it comprises:

- a weight sensor (18) on which said mechanical support is mounted and which is adapted to deliver a signal representative of the weight exerted by said mechanical support on said weight sensor;

- a user interface (26) for entering data relating to the drainage of said filter unit (16) and/or to said liquid substance; and

- a control unit (24) connected to said suction pump (22), the weight sensor (18) and said user interface (26), said control unit (24) being adapted to determine, from said data, at least a first weight corresponding to a first representative signal;

and in that, when said weight sensor (18) supplies a signal corresponding to said first signal, said control unit (24) starts operation of said suction pump (22) so as to aspirate said liquid substance contained in said filter unit (16).

2. Drainage device according to claim 1, characterized in that said control unit (24) stops operation of said suction pump (22) when said weight sensor (18) supplies a stationary signal representative of a constant weight exerted on said weight sensor (18) by said mechanical support (10) after said liquid has been aspirated.

3. A drainage device according to claim 1,

characterized in that said control unit determines from said data at least a second weight corresponding to a second representative signal;

and in that said control unit (24) is adapted to command warning means (32) to warn the user when said weight sensor (18) supplies a signal corresponding to said second signal.

4. A drainage device according to any one of claims 1 to 3, characterized in that said control unit (24) starts the operation of said suction pump (22) after said weight sensor (18) has supplied a stationary signal representative of said first weight.

5. A drainage device according to any one of claims 1 to 4, characterized in that said mechanical support (10) comprises a reception head (14) for receiving said filter unit, said reception head (14) having a reception surface (70) opposite which said membrane (98) can be disposed and onto which an suction duct (22) discharges, and in that said reception head (14) includes a passage (92), one end (94) of which discharges externally of said reception surface and the other end (96) of which discharges onto said reception surface (70), said reception head (14) comprising a selectively operable valve (90) mobile between a first position in which it shuts off said passage (92) and a second position in which it frees said passage (92).

6. A drainage device according to claim 5, characterized in that said control unit (24) commands movement of said selectively operable valve (90) into said second position and starts the operation of said suction pump (22) when said weight sensor (18) supplies a stationary signal representative of a constant weight exerted on said weight sensor (18) by said mechanical support (10) after said liquid substance has been aspirated.

7. A drainage device according to claim 5, characterized in that said control unit (24) commands movement of said selectively operable valve (90) into said second position when said weight sensor (18) supplies signals respectively representative of an upper limit weight when said filter unit (16) is placed on said reception head (14) and a lower limit weight when said filter unit (16) is removed from said reception head (14).

8. A drainage device according to any one of claims 1 to 7, characterized in that it comprises a frame (20), said weight sensor (18) extends substantially horizontally between a first end (52) fastened to said frame (20) and a second end (54) that is free with respect to said frame (20), and said mechanical support (10) rests on said second end (54) of said weight sensor (18).

9. A drainage device according to claim 8, characterized in that said mechanical support (10) is connected to said suction pump (22) by a tubular member (60) having at least one flexible portion that extends from said mechanical support (10) substantially perpendicularly to the direction of operation of said weight sensor (18).

10. A drainage device according to claim 5 and according to any one of claims 6 to 9, characterized in that said mechanical support comprises a reception head support (12) entirely fastened to said weight sensor (18) and said reception head (14) is removably fastened to said head support (12) with lockable connecting means (66, 44, 90, 82).

11. A drainage device according to claim 10, characterized in that said head support has a circular cylindrical projecting vertical portion (44) adapted to cooperate with an opening (66) formed in the portion

opposite said reception surface (70) of said reception head (14) and said reception head (14) and said projecting vertical portion (44) are fastened together by keying means to form said lockable connecting means.

5 12. A drainage device according to claim 11, characterized in that said reception head has a transverse bore (82) adapted to cooperate with a groove (78) formed around said vertical portion (44) and said transverse bore (82) is adapted to receive removable key
10 means (80).

 13. A drainage device according to any one of claims 10 to 12, characterized in that said head support (12) has an suction branch (56), one end (58) of which is adapted to be connected to said suction duct (72) of said
15 reception head (14) and the other end of which is adapted to be connected to said suction pump (22).

 14. A drainage device according to any one of claims 10 to 13, characterized in that said head support (12) includes a control device (28) adapted to cooperate
20 with said selectively operable valve (90) to move it into said first position or into said second position.

 15. A drainage device according to claim 14, characterized in that said control device includes a solenoid (28) whose core is adapted to drive said
25 selectively operable valve (90).

 16. A drainage device according to claim 8 and according to any one of claims 9 to 15, characterized in that it comprises an armature covered with a casing (34), bearing on a chassis, said frame (20) is suspended from
30 said armature in the space between said chassis and said armature, and an opening (40) in the casing (34) facing said head support (12) is adapted for mounting and demounting said reception head (14).